


amended to conform with U.S. practice, the cross-reference to the related application has been inserted on page 1. Also, claims 1-6 have been replaced by new claims 7-13 to avoid the surcharge for multiple dependency. In addition, an Abstract of the Disclosure has been added on its own separate page. No new matter has been introduced.

Entry of this amendment is respectfully requested.

Respectfully submitted,

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Enclosure: marked-up copy of paragraphs

Express Mail No. EL 871 451 813 US
Date of Deposit February 14, 2002

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204720-96469007

This is accomplished by means of an electronic data processing system which, after a defect has been reported, recognizes the type of defect involved, calculates the location of the defect in the later final product, and controls the marking device with the help of said data. The term ``marking'' means in the present context primarily a color marking on the final product. The product can be marked with different colors for internal and external defects, and repairable and irreparable defects.

However, according to the invention, ``marking'' also relates to an electronic virtual marking with the help of which the sorting process is controlled, whereby the computer is coupled with the sorting device.

Owing to the fact that the detection and marking of defects are integrated in the rolling and cutting-to-length process, the result is a more precise and primarily a sure-targeted detection of defects, and a minimization of the processing time. Thus the rods detected to be good can be directly transported to the straightening or fin removal stations.

Since it is known from past experience that many defects are found in the head piece of the rolled material, the detection of defects according to claim⁹[3] is started only with a time delay, notably depending on the final rolling

speed (3 m/s to 15 m/s), so that the head piece, which has to be cropped in any case, is disregarded in the detection as well as marking steps.

According to claim ⁹[3] provision is made that the detected individual defects are summed up during a preset period of time and the marking command is triggered only once a previously defined defect relevance level has been reached.

In this way, it is assured that not every minor defect will immediately lead to a marking command, but that only defects are marked that make the product in fact unusable or lead to reworking of the material.

According to claim ¹⁰[4] the detected relevant defects are marked directly on the hot rolled material shortly after the latter has exited from the last rolling stand, thus before the material is cut to the length of the cooling bed.

With the help of the installed electronic data processing system it is possible also to mark the material after it has been cooled on the cooling bed, before or after it is cut to the length specified by the customer. For this purpose, the material has to be logically marked by the program stored in the computer, so that the flawed part of the rolled rod can be virtually marked and sorted out.